

ENVIS Centre on  
AVIAN ECOLOGY

# BUCEROS

ENVIS Newsletter Vol. 19, No. 3, 2014



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## ABOUT ENVIS

ENVIS (Environmental Information System) is a network of subject-specific centres located in various institutions throughout India. The focal point of the present 66 ENVIS centres in India is at the Ministry of Environment, Forests and Climate Change, New Delhi, which further serves as the Regional Service Centre (RSC) for INFOTERRA, the global information network of the United Nations Environment Programme (UNEP) to cater to environment information needs in the South Asian sub-region. The primary objective of all ENVIS centres is to collect, collate, store and disseminate environment related information to various user groups, including researchers, policy planners, and decision makers.

The ENVIS Centre at the Bombay Natural History Society was set up in June 1996 to serve as a source of information on Avian Ecology.

### Objectives of the ENVIS Centre at BNHS

- ✓ To create a bibliographic database of published literature related to avian ecology study
- ✓ To publish and distribute *BUCEROS* newsletter on avian ecology to its members
- ✓ To create and upload databases on avian ecology on ENVIS website [www.bnhsenvis.nic.in](http://www.bnhsenvis.nic.in)
- ✓ To reply to queries related to birds



Lesser Flamingo *Phoeniconaias minor*  
Photograph: Pranit Gupte



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ENVIS Newsletter  
Avian Ecology  
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### ENVIS TEAM AT THE BNHS

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Blue-fronted Redstart *Phoenicurus frontalis*  
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## EDITORIAL

The intensity and frequency of natural calamities is on the rise over the past few years. Anthropogenic pressure acts as a catalyst for such devastations, leading to huge losses in every sector at the local as well as global level. While ecological losses caused during such calamities are severe, they hardly get the attention they deserve. There is an urgent need to scientifically evaluate the impact of natural disasters on ecosystems.

In this Issue, we have tried to highlight for our readers the impact of the devastating Kashmir floods, which occurred in September 2014, on migratory birds. Dr. Asad R. Rahmani, Director, BNHS, and ENVIS Coordinator said, "The disastrous damage caused to life and property could have been minimized if the large number of wetlands that once existed in the Valley had been preserved". However, nature is resilient and can recover from such events as was proved with the restoration of the wetlands and congregation of a large number of migratory birds in winter despite the disaster.

The Kaziranga National Park in Assam is not only about the Greater One-horned Rhinoceros *Rhinoceros unicornis* or Tiger *Panthera tigris*. We have carried an article that brings to fore the rich avifauna of the park. The author elaborates on the threatened birds he spotted during his visit to the Park. Alongside is another article on a birding experience, this time in the lesser-known Gautala Autramghat Wildlife Sanctuary of Aurangabad, Maharashtra. It is an attempt to introduce our readers to less explored birding areas and encourage them to visit such places.

The BNHS-ENVIS Centre on Avian Ecology is encouraging researchers to present their study on birds in their regional languages. As BNHS-ENVIS Centre is located in Maharashtra, we have carried one article in Marathi language in this issue.

The BNHS-ENVIS Centre actively participates in workshops to promote the ENVIS scheme. We have tried to give our readers a peek into one such participation in Solapur, Maharashtra. An Evaluation-cum-Training workshop held for all ENVIS Centres of the western region in Nagpur, Maharashtra is also described in the same section.

The Bombay Natural History Society's annual Flamingo Festival held in Mumbai in February 2015 is briefly described in this Issue. A festival like this plays a vital role in disseminating information to people on flamingos and other wetland birds. Ultimately, it helps people to understand the importance of wetlands in an easy and effective manner. The ENVIS team participated in this event and answered queries posed by the public who flocked to the festival.

In our Abstracts section, we have tried to highlight the efforts of researchers studying the foraging behaviour and nesting characteristics of birds. The section also includes a unique research of culturing aerobic microflora residing in *Gyps* vulture species of India.

Hope our readers will find this issue interesting and informative.

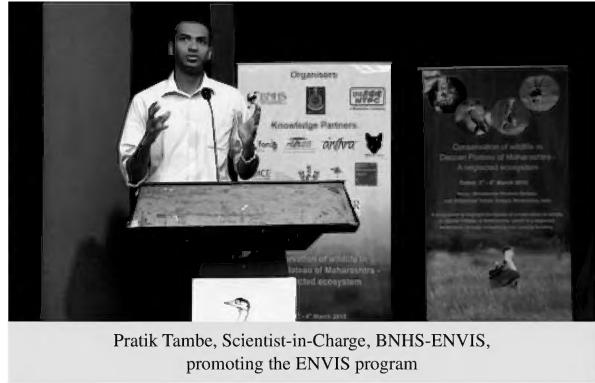
Happy reading!

**Pratik P. Tambe**  
**Scientist-in-Charge**



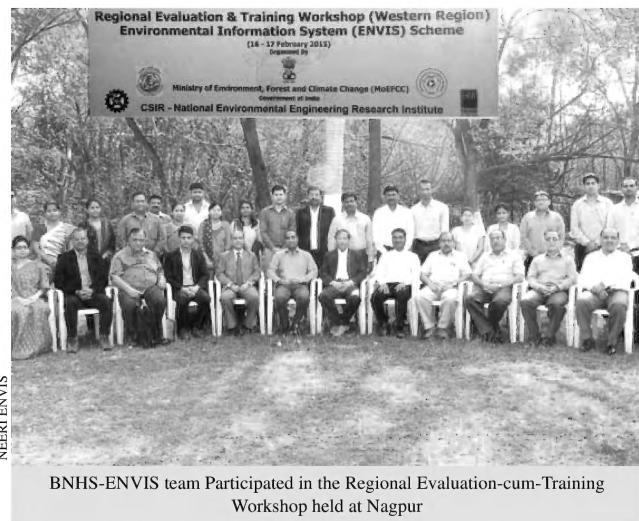
### Workshop on 'Conservation of Wildlife in Deccan Plateau of Maharashtra – a neglected ecosystem'

Pratik Tambe, Scientist-in-Charge at BNHS-ENVIS Centre on Avian Ecology, participated in a workshop on 'Conservation of Wildlife in Deccan Plateau' organised by BNHS and National Thermal Power Corporation at Solapur, Maharashtra, from 3–4 March, 2015. The workshop was attended by senior officials, as well as ground staff of the Maharashtra Forest Department, NGOs and volunteers, working in the Deccan Plateau. Pratik Tambe promoted the ENVIS program of the Ministry of Environment, Forests and Climate Change (MoEF&CC) by making a presentation on the ENVIS project, and briefing the participants about the activities carried out at the BNHS-ENVIS Centre on Avian Ecology, Mumbai.



Pratik Tambe, Scientist-in-Charge, BNHS-ENVIS, promoting the ENVIS program

Amol Lokhande



NEERI ENVIS

BNHS-ENVIS team Participated in the Regional Evaluation-cum-Training Workshop held at Nagpur

### Regional Evaluation-cum-Training Workshop (Western Region), 2015

A two-day evaluation-cum-training workshop for ENVIS Centres of the western region (i.e., those located in the states of Maharashtra, Gujarat, Chhattisgarh, and Madhya Pradesh) was held at Nagpur, Maharashtra, on 16 and 17 February 2015. The workshop was hosted by CSIR-National Environmental Engineering Research Institute (NEERI) ENVIS Centre. Around 30 participants of the 13 Thematic as well as State ENVIS Centres participated in the workshop.

The workshop was inaugurated by Dr. Satish R. Wate, Director, NEERI. Abhay Kumar, Deputy Economic Adviser, MoEF&CC and distinguished experts across

various fields were invited to evaluate as well as advise the participants. The experts who attended the workshop for evaluation included Krishna Rao T.V.P., Dr. Rajesh Gupta, Dr. A.K. Soni and Dr. Tamil Selvan. Pratik Tambe, Scientist-in-Charge, and Sailee Joshi, Information Officer, of BNHS-ENVIS Centre explained the contents of the ENVIS Centre's website to experts and briefed them about the overall working of the Centre. The Centre received positive comments from the experts.

During the workshop, the participating ENVIS centres offered to share their information and recommendations with the BNHS-ENVIS. It was decided that all ENVIS centres should work hand-in-hand and effectively disseminate the data to users.

The second day of the workshop was marked by a crucial training on the Bhuvan portal by Arul Raj from National Remote Sensing Centre. Bhuvan is a geospatial portal developed by Indian Space Research Organisation (ISRO). Participants were introduced to the basics of Bhuvan and its use. Main focus of the training was to incorporate the Geographic Information System-based (GIS-based) information into the websites of the ENVIS Centres. The workshop concluded with a thought-provoking session by experts who shared their observations and suggestions.



## Organisational News

### Mumbai flocks to Sewri to catch up with flamingos

Thousands of Mumbaikars headed to Sewri Jetty on 28 February 2015, a Saturday, to catch a glimpse of the pink spectacle of flamingos, which migrate to the city during winters. With over 15,000 flamingos, the eighth annual Flamingo Festival organised by the Bombay Natural History Society in association with the Mumbai Port Trust, was a delight for nature lovers.

Enthusiasts were seen waiting patiently with cameras, binoculars, and telescopes to catch a glimpse of the flamingos. The festival also included an informative exhibition on flamingos, stalls displaying BNHS publications and education materials.

The festival is BNHS' attempt to spread awareness about conservation of wetland birds. Dr. Deepak Apte, Chief Operating Officer, BNHS, said, "Vital coastal ecosystem comprising mudflats, mangroves, and creeks need to be protected for birds as well as for the well being of people."

The two types of flamingos that visit Mumbai for the past two decades are Greater Flamingos and Lesser Flamingos.

According to BNHS, while the number of flamingos migrating to the city is more or less constant at 15,000 since the past few years, there is an immediate need to conserve the habitat. "Sewri is one of the most prominent 'Important Bird and Biodiversity Areas' in Maharashtra due to the diverse nature of its wetland inhabitants. However, it is facing several threats such as the proposed Mumbai Trans Harbour Link cutting across the flamingo feeding area. There is already a lot of pollution around," said Atul Sathe, Manager-Communications, BNHS.

The BNHS has recommended that the Mumbai Trans Harbour Link be shifted 500 m south to minimize the damage.



The ENVIS staff assisting visitors in bird watching

Tejasree Nakache



ENVIS staff promoting activities of the Centre during the Flamingo Festival

Noor Khan

Nandkishor Durdie

With an extra effort to reach out to children, BNHS this year also introduced painting, poetry writing and slogan competitions for students from class V to VII. The competitions saw entries from over 300 students from across the city. Several schools also brought batches of young students to the fair on Saturday. "There is a need to sensitize children about nature conservation and we were glad to see such tremendous participation from them," said Sathe.

<http://epaperbeta.timesofindia.com/Article.aspx?eid=31804&articlexml=Mumbai-flocks-to-Sewri-to-catch-up-with-01032015020011>



People from different age groups and backgrounds attended the Flamingo Festival 2015 organised by BNHS



### A date with the Valley

The unprecedented floods in Jammu and Kashmir in September last year left a trail of destruction. While the State is still dealing with its aftermath, wildlife authorities have something to cheer about: winged visitors kept their date with the Valley despite the damage caused to the wetlands.

Wetlands in the State have been rapidly shrinking over the years due to urban encroachment. The floods only worsened their condition. The water brought with it mud, piles of rubble, dirt, rocks, debris from damaged houses and highways, septic waste from houses and sewage. These blocked the inflow and outflow channels of the wetlands. Oil from petrol pumps drifted along with the flood water and accumulated in the Hokarsar wetland, 14 km north of Srinagar. The water contamination, ecologists feared, would take a toll on the number of migratory birds this season. But they were pleasantly surprised as birds flocked to their winter homes, including Hokarsar wetland, at the usual time.

#### No stopping the winged visitors

Migratory birds translocate to Kashmir every year to avert the extreme winter in Russia and Central Asia. Birds also come from the Philippines, Turkey and China.

"The number of migratory birds is slowly going up, which is the usual trend. It increased from 0.3 million in November 2014 to 0.6 million in December. With more birds flocking, the number is expected to go up further. This is satisfactory considering the damage caused by the flood," says Imtiyaz Ahmad Lone, Wildlife Warden (Wetlands), Srinagar. Comparative studies indicate an upward trend in the number of migratory birds in the State in recent years. Last year, 1.2 million birds were recorded.

The wildlife authorities claim that they took prompt action to ensure that the natural habitat of the birds was not disturbed. Although they did not have a mechanism in place to take out the oil, they worked overtime to clean the waters. “We cleared the inflow and outflow channels, which were blocked by solid waste and silt. Once these channels were free, the oil slick was drained and fresh water could easily come in,” Lone adds.

Other wetlands towards north Kashmir, including Shallabugh, Hygam and Mirgund, witnessed a sparse migratory population at the onset of winter. This was because of the drop in the water level due to breaches in the embankments caused by the flood. The breaches have been plugged in Shallabugh. Balkol channel, which brings water to the Hygam wetlands, also faced the same problem. The wildlife department says it is working with the Wular Development Authority to restore the channel. All of this was done with the existing manpower and available funds.

Another apprehension of the ecologists was disease among the migratory birds, especially when bird flu has been reported in many parts of India. But there has been no such case in Kashmir so far, according to the government. Migratory birds are also susceptible to poaching as they can fetch a hefty price. Lone claims that no case of poaching has been reported this season.

#### **Flood impact requires study**

The large number of seasonal birds is undoubtedly good news for the State’s wildlife. However, it is not a yardstick to negate the adverse impact of the flood.

The Wildlife Warden admits that the flood has damaged the ecosystem, but the government is yet to initiate a study on the long-term effect of the natural calamity on the environment. “We are still recovering and it will take time to analyze the destruction caused by the flood,” he adds.

Shakil Romshoo, head of the Department of Earth Sciences in the University of Kashmir, emphasizes the need for a comprehensive study. “Lessons learnt from environmental studies can be applied to assess priorities and mitigate the potential for environmental contamination in case of extreme flood events in future,” he says.

Another reason for a study is the variability of water contamination. The Jhelum, which feeds the Valley’s water bodies, flows from the foothills to the plains. The sources and type of contamination of its water in the hills would be different from that in the plains. Specialized knowledge is needed to understand and analyze such differences. Romshoo says the wildlife department does not have capable experts and that scientists and academicians should be roped in for the purpose.

He has extensively studied the State’s wetlands based on satellite data and research from 1969 to 2008. He observes that the wetlands’ open water area during this period has shrunk from 18.75 sq. km to 13 sq. km, and blames siltation for the poor health of the wetlands.

The wildlife department claims that its main focus is on the management of these water bodies. “We have already submitted a report to the government regarding the financial support needed for their restoration,” Lone says.

But the most pressing problem of all is encroachment. Environment experts have called for urgent action.

Asad R. Rahmani, Director, Bombay Natural History Society, says, “Encroachment is a major concern regarding the destruction of the natural habitat of birds. Just as there are efforts aimed at forest conservation, there must be efforts to preserve our wetlands.”

<http://www.downtoearth.org.in/content/date-valley>



## Articles

### Kaziranga – a heaven for threatened birds

Siddhesh S. Surve, Project Assistant IBA-IBCN

We have all heard about the famous Kaziranga National Park for it is the best place in India to see the majestic Greater One-horned Rhinoceros *Rhinoceros unicornis*. I have seen people get disappointed after safaris because they missed the sight of a Tiger *Panthera tigris*. But Kaziranga is not just about Tigers and Rhinos, it is the land of megafauna; you just cannot get disappointed here. One can easily spot a herd of Asian Elephant *Elephas maximus*, Wild Buffalo *Bubalus arnee*, Swamp Deer or Barasingha *Rucervus duvaucelii* and Hog Deer *Axis porcinus* all in one safari.

I visited Kaziranga National Park for a week in February 2015. During this period I happened to visit all the four ranges of the park, *viz.* Agoratoli, Kohora, Bagori, and Buraphar. I also made a short trip to the adjoining Karbi-Anglong hills. This is the place where animals take shelter when Kaziranga is inundated during the rains.

As far as bird life is concerned, a whooping 478 species have been recorded from this place. However, in this trip I only managed to see 116 species out of which seven were Threatened (Critically Endangered, Endangered and Vulnerable) and 10 Near Threatened species.

#### Threatened species sighted in Kaziranga National Park

(Reason for their decline is as per BirdLife International 2015)

##### **Slender-billed Vulture** *Gyps tenuirostris* (Critically Endangered)

One individual was spotted on a tree in the Kohora range. A few metres away we observed a nest which could have been of another individual. This species is classified as Critically Endangered because it has suffered an extremely rapid population decline, particularly across the Indian subcontinent, largely as a result of feeding on carcasses of animals treated with the veterinary drug diclofenac, which causes kidney failure in these birds.

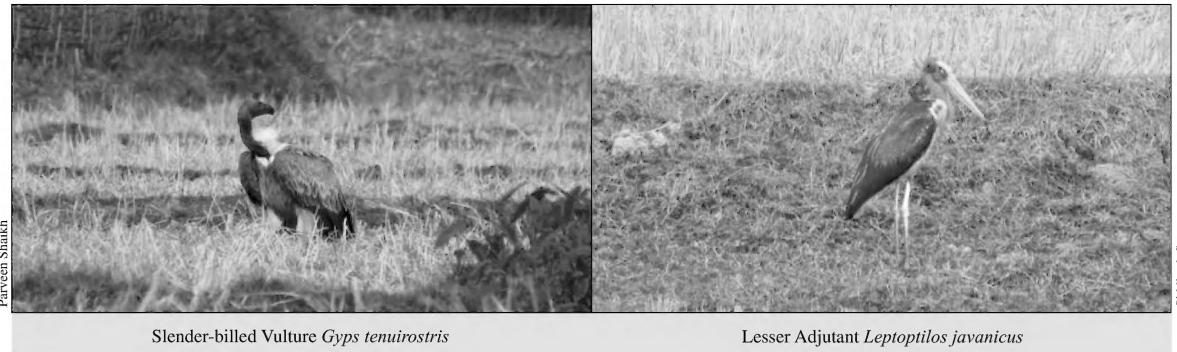
##### **Greater Adjutant** *Leptoptilos dubius* (Endangered)

A single bird was seen in flight at Kohora. BirdLife International identifies this bird as Endangered because this once wide-ranged species has now a very small population, which is declining very rapidly.



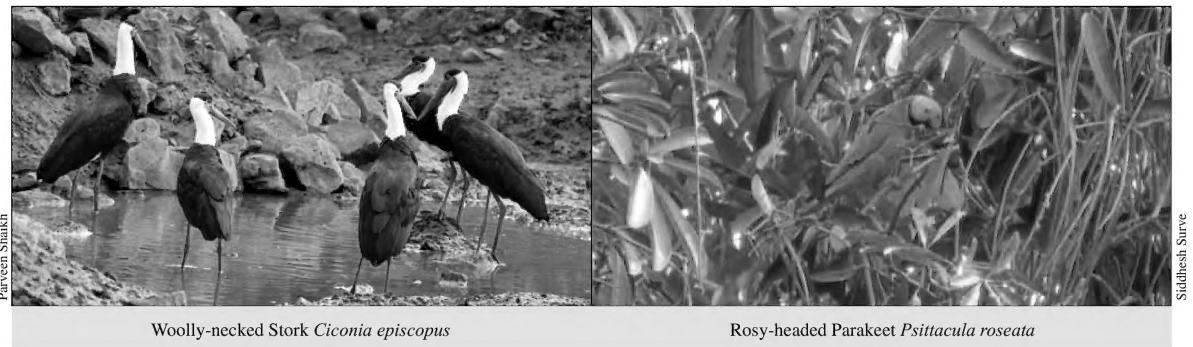
### **Lesser Adjutant *Leptoptilos javanicus* (Vulnerable)**

Two birds were spotted at the Agoratoli range. Later, 39 birds were observed perched on a tree in Kohora and a few more from different locations in the same range. This stork is listed as Vulnerable because its population is suspected to be rapidly declining as a result of a variety of threats, including hunting pressure, loss of nesting trees, conversion and degradation of wetlands, and agricultural changes and intensification.



Slender-billed Vulture *Gyps tenuirostris*

Lesser Adjutant *Leptoptilos javanicus*



Woolly-necked Stork *Ciconia episcopus*

Rosy-headed Parakeet *Psittacula roseata*

### **Woolly-necked Stork *Ciconia episcopus* (Vulnerable)**

One bird was spotted near a partially dried wetland in the Burapahar range and one bird in the Bagori range. It is listed as Vulnerable because it is suspected to be undergoing a rapid population decline owing mainly to habitat loss and persecution.

### **Pallas's Fish-eagle *Haliaeetus leucoryphus* (Vulnerable)**

An individual was spotted perched on top of a tree in Agoratoli and two birds in Kohora. It qualifies as Vulnerable as it has a small, declining population because of degradation and disturbance of wetlands and breeding sites throughout its range.

### **Greater Spotted Eagle *Clanga clanga* (Vulnerable)**

One bird was sighted in Agoratoli trying to steal a Hoary-bellied Squirrel *Callosciurus pygerythrus* kill made by a Changeable Hawk-eagle *Nisaetus limnaeetus*. This species is classified as Vulnerable owing to a small population, which appears to be declining due to extensive habitat loss.

### **Swamp Francolin *Francolinus gularis* (Vulnerable)**

Although the bird wasn't actually seen in any of the ranges, its call was heard from Kohora, Bagori, and Burapahar suggesting that the bird is fairly common in the entire region. Owing to its rapid decline in population due to habitat degradation and hunting, the bird now qualifies as Vulnerable.

### **Near Threatened and Common species sighted in Kaziranga National Park**

10 Near Threatened species observed in the park were Spot-billed Pelican *Pelecanus philippensis*, Oriental Darter *Anhinga melanogaster*, Black-necked Stork *Ephippiorhynchus asiaticus*, Ferruginous Duck *Aythya nyroca*, Grey-headed Fish-eagle *Ichthyophaga ichthyaetus*, River Tern *Sterna aurantia*, Alexandrine Parakeet *Psittacula eupatria*, Rosy-headed Parakeet *Psittacula roseata*, Red-breasted Parakeet *Psittacula alexandri* and Great Pied Hornbill *Buceros bicornis*. Most of these species

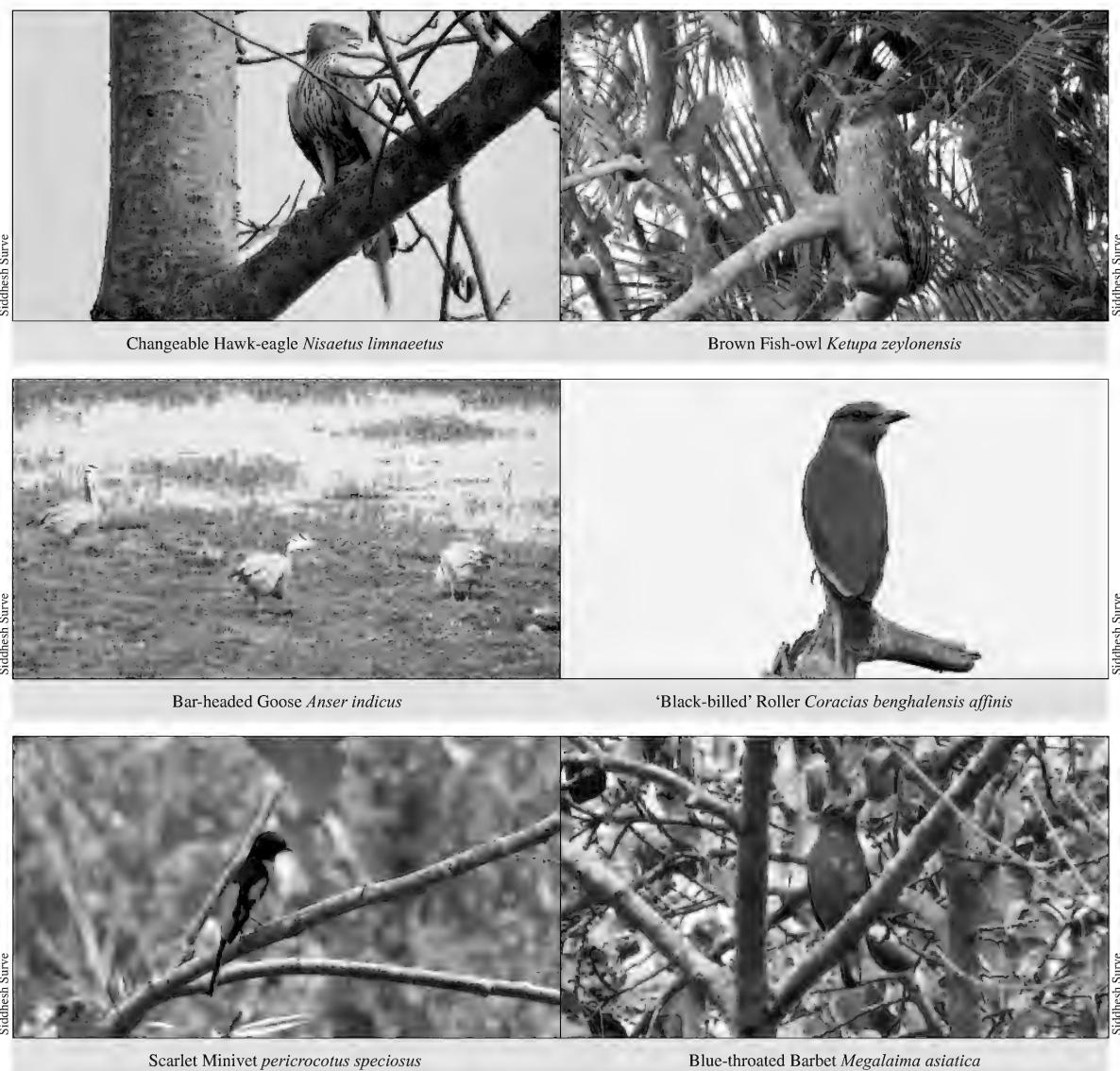
can be easily seen inside the park, with Red-breasted Parakeet being the most abundant. Oriental Darter is also fairly common in almost all huge water bodies. Black-necked Stork and Grey-headed Fish-eagle are also commonly seen here.

The common species include four species of kingfishers: Common Kingfisher *Alcedo atthis*, Stork-billed Kingfisher *Pelargopsis capensis*, White-throated Kingfisher *Halcyon smyrnensis* and Lesser Pied Kingfisher *Ceryle rudis*; four species of barbets: Lineated Barbet *Megalaima lineata*, Blue-throated Barbet *Megalaima asiatica*, Blue-eared Barbet *Megalaima australis* and Coppersmith Barbet *Xantholaema haemacephala*, and four species of bulbuls: Red-whiskered Bulbul *Pycnonotus jocosus*, Red-vented Bulbul *Pycnonotus cafer*, Ashy Bulbul *Hemixos flavala* and White-throated Bulbul *Alophoixus flaveolus*. Birds like 'Black-billed' Roller *Coracias benghalensis affinis*, Dollarbird *Eurystomus orientalis*, Brown Fish-owl *Ketupa zeylonensis*, Bar-headed Goose *Anser indicus*, and Scarlet Minivet *pericrocotus speciosus* were also sited in the park.

Every enthusiastic birdwatcher must visit Kaziranga.

Reference:

BirdLife International (2015): Species factsheet. Downloaded from <http://www.birdlife.org> (As accessed in March, 2015).





### Birding at Ganjam, Aitranghat Wildlife Sanctuary

Prasen P. Deshpande and Umashankar D. Hinkar

After a long period of drought, a rare monsoon has brought a bumper crop of water. This article describes the birding opportunities in the Ganjam region of Odisha, and the authors share their observations on the bird life of the Aitranghat Wildlife Sanctuary.

Amitava Deshpande

Gautala Autramghat Wildlife Sanctuary is nestled between Aurangabad and Jalgaon districts of Maharashtra, and is spread over 250 sq. km. The survey was done in the forest area of Aurangabad which covers only one third of the total forest area. Most part of this forest is dominated by Anjan, Teak, Khair, and Dhawda trees. Over 180 species of birds have been recorded in this Sanctuary. The Sanctuary also has a good number of reptiles and mammals. Nilgai *Boselaphus tragocamelus*, Barking Deer *Muntiacus muntjak*, Grey Langur *Semnopithecus* sp., Wild Boar *Sus scrofa*, Sambar *Rusa unicolor* and Leopard *Panthera pardus* are some of the mammals found here.

Our team sighted 154 species of birds during this survey, which include number of flycatchers like Asian Paradise Flycatcher *Terpsiphone paradisi*, Asian Brown Flycatcher *Muscicapa latirostris*, Tickell's Blue Flycatcher *Cyornis tickelliae*, Grey-headed Canary-flycatcher *Culicicapa ceylonensis*, Red-breasted Flycatcher *Ficedula parva*, Ultramarine Flycatcher *Ficedula superciliaris*, and Verditer Flycatcher *Eumyias thalassinus*. These species of flycatchers were mostly recorded at the lower side of the forest where there is an abundance of water with thick foliage and good canopy cover throughout the year compared to other parts of the forest.



Several species of minivets were also identified during the survey, among which the Small Minivet *Pericrocotus cinnamomeus* was seen in good numbers. A pair of White-bellied Minivet *Pericrocotus erythropygius* was recorded only twice during the winter season. The Common Woodshrike *Tephrodornis pondicerianus* was seen searching for food on the barks.

Among the woodpeckers, Black-rumped Flameback *Dinopium benghalense*, Indian Pygmy Woodpecker *Dendrocopos nanus* and Yellow-fronted Pied Woodpecker *Dendrocopos mahrattensis* were easily seen throughout the year. The Common Hoopoe *Upupa epops* and Indian Roller *Coracias benghalensis* were seen quite often, while European Roller *Coracias garrulus* was sighted in the winter season. The family of doves we saw included species like Spotted Dove *Spilopelia chinensis*, Laughing Dove *Spilopelia senegalensis*, and Eurasian Collared-dove *Streptopelia decaocto*. The Yellow-footed Green-pigeon *Treron phoenicopterus* were seen early in the morning basking in the sun. The noisy Rose-ringed Parakeet *Psittacula krameri*, Alexandrine Parakeet *Psittacula eupatria* and Plum-headed Parakeet *Psittacula cyanocephala* were often seen flying overhead or searching for fruits.

At dusk, we spotted nightjars such as Indian Jungle Nightjar *Caprimulgus indicus* and Indian Little Nightjar *Caprimulgus asiaticus* sitting on forest trails or tar roads. Indian Stone-curlew *Burhinus indicus* often gave a surprise sighting near small water bodies in the forest. We observed shy, ground dwelling birds like Grey Francolin *Francolinus pondicerianus* and Jungle Bush-quail *Perdicula asiatica* on the roads just before dark.



Plum-headed Parakeet *Psittacula cyanocephala*

Asian Paradise Flycatcher *Terpsiphone paradisi*

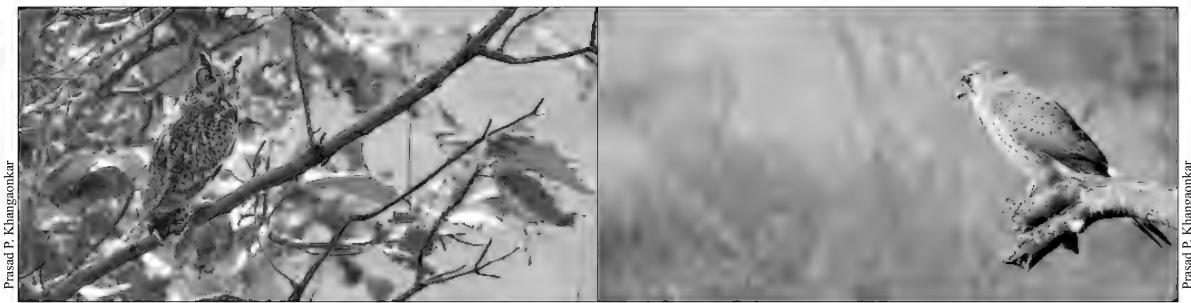
We spotted nests of Crested Serpent-eagle *Spilornis cheela*, Bonelli's Eagle *Aquila fasciata*, Shikra *Accipiter badius* and Oriental Honey-buzzard *Pernis ptilorhynchus* during our survey of Gautala Autramghat Wildlife Sanctuary. Apart from these raptors, Black Kite *Milvus migrans*, Black-winged Kite *Elanus caeruleus*, Short-toed Eagle *Circaetus gallicus*, Greater Spotted Eagle *Clanga clanga*, Tawny Eagle *Aquila rapax*, Crested Hawk-eagle *Nisaetus cirrhatus*, White-eye Buzzard *Butastur teesa*, Common Kestrel *Falco tinnunculus*, Red-headed Falcon *Falco chicquera* and Peregrine Falcon *Falco peregrinus* were recorded many times in this forest.

The other side of the Gautala WLS is a rocky region where statues of the Buddha are engraved in the famous Pitalkhora caves. One can easily see and listen to the calls of Indian Eagle-owl *Bubo bengalensis* and Brown Fish-owl *Ketupa zeylonensis* around these caves. This specific region is a good nesting ground for owls; recently we spotted the nest of a Brown Fish-owl with a sub-adult sitting inside it. The small openings through these rocks are used by the Spotted Owlet *Athene brama*.

The grassland at the hill tops have good growth of grass, where we sighted many Grey Francolin, bushchats, stonechats, buntings, Rock Bush-quail *Perdicula argoondah* and Jungle Bush-quail. The family of larks we saw included Sykes's Lark *Galerida deva*, Ashy-crowned Finch-lark *Eremopterix griseus*, Indian Bushlark *Mirafra erythroptera* and Rufus-tailed Lark *Ammomanes phoenicura*. The Indian Peafowl *Pavo cristatus* has much dominance in this area in addition to partridges and fowls. Many raptors were identified in this area soaring high up in the sky. Shikra *Accipiter badius*, Greater Spotted Eagle and Oriental Honey-buzzard were seen very commonly. The lack of vulture sightings in the past few years speaks for how bad the condition is for these birds.

During the winter season, we spotted a flock of Demoiselle Crane *Grus virgo* and Bar-headed Goose *Anser indicus* flying over the forest, while Indian Spot-billed Duck *Anas poecilorhyncha*, Ruddy Shelduck *Tadorna ferruginea*, sandpipers and plovers were seen in the adjacent lake of the forest.

There is more to explore in this forest, and the Environmental Research Foundation Academy is working for its conservation hand-in-hand with the Forest Department of Aurangabad.



Indian Eagle-owl *Bubo bengalensis*

Common Kestrel *Falco tinnunculus*

**Acknowledgments**— I thank the Forest Department of Aurangabad for their help and co-operation.

I thank Dilip Yardi (Hon. Wildlife Warden) for his help in the field, and Ameya Deshpande for the photograph.

The list of birds we saw in the Gautala Region is given below:

Sr. No.	Common Name	Scientific Name	Sr. No.	Common Name	Scientific Name
1	Bar-headed Goose	<i>Anser indicus</i>	39	Savanna Nightjar	<i>Caprimulgus affinis</i>
2	Ruddy Shelduck	<i>Tadorna ferruginea</i>	40	Rock Pigeon	<i>Columba livia</i>
3	Indian Spot-billed Duck	<i>Anas poecilorhyncha</i>	41	Yellow-footed Green-Pigeon	<i>Treton phoenicophaeus</i>
4	Grey Francolin	<i>Francolinus pondicerianus</i>	42	Laughing Dove	<i>Spilopelia senegalensis</i>
5	Jungle Bush-quail	<i>Perdicula asiatica</i>	43	Eurasian Collared Dove	<i>Streptopelia decaocto</i>
6	Rock Bush-quail	<i>Perdicula argoondah</i>	44	Spotted Dove	<i>Spilopelia chinensis</i>
7	Yellow-legged Buttonquail	<i>Turnix tanki</i>	45	Red-wattled Lapwing	<i>Vanellus indicus</i>
8	Barred Buttonquail	<i>Turnix suscitator</i>	46	Yellow-wattled Lapwing	<i>Vanellus malabaricus</i>
9	Indian Peafowl	<i>Pavo cristatus</i>	47	Indian Stone-curlew	<i>Burhinus indicus</i>
10	Demoiselle Crane	<i>Grus virgo</i>	48	Black Kite	<i>Milvus migrans</i>
11	Indian Pygmy Woodpecker	<i>Dendrocopos nanus</i>	49	Black-winged Kite	<i>Elanus caeruleus</i>
12	Yellow-fronted Pied Woodpecker	<i>Dendrocopos mahrattensis</i>	50	Crested Serpent-eagle	<i>Spilornis cheela</i>
13	Black-rumped Flameback	<i>Dinopium benghalense</i>	51	Short-toed Eagle	<i>Circaetus gallicus</i>
14	Coppersmith Barbet	<i>Xantholaema haemacephalum</i>	52	Greater Spotted Eagle	<i>Clanga clanga</i>
15	Indian Grey Hornbill	<i>Ocyceros birostris</i>	53	Tawny Eagle	<i>Aquila rapax</i>
16	Common Hoopoe	<i>Upupa epops</i>	54	Bonelli's Eagle	<i>Aquila fasciata</i>
17	Indian Roller	<i>Coracias benghalensis</i>	55	Crested Hawk-eagle	<i>Nisaetus cirrhatus</i>
18	European Roller	<i>Coracias garrulus</i>	56	Shikra	<i>Accipiter badius</i>
19	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	57	Oriental Honey-buzzard	<i>Pernis ptilorhynchus</i>
20	Common Kingfisher	<i>Alcedo atthis</i>	58	White-eyed Buzzard	<i>Butastur teesa</i>
21	Little Green Bee-eater	<i>Merops orientalis</i>	59	Common Kestrel	<i>Falco tinnunculus</i>
22	Jacobin Cuckoo	<i>Clamator jacobinus</i>	60	Red-headed Falcon	<i>Falco chicquera</i>
23	Common Hawk-cuckoo	<i>Hierococcyx varius</i>	61	Peregrine Falcon	<i>Falco peregrinus</i>
24	Grey-bellied Cuckoo	<i>Coconotus passerinus</i>	62	Indian Pitta	<i>Pitta brachyura</i>
25	Asian Koel	<i>Eudynamys scolopaceus</i>	63	Jerdon's Leafbird	<i>Chloropsis jerdoni</i>
26	Greater Coucal	<i>Centropus sinensis</i>	64	Bay-backed Shrike	<i>Lanius vittatus</i>
27	Rose-ringed Parakeet	<i>Psittacula krameri</i>	65	Long-tailed Shrike	<i>Lanius schach</i>
28	Plum-headed Parakeet	<i>Psittacula cyanocephala</i>	66	Great Grey Shrike	<i>Lanius excubitor</i>
29	Alexandrine Parakeet	<i>Psittacula eupatria</i>	67	Isabelline Shrike	<i>Lanius isabellinus</i>
30	Little Swift	<i>Apus affinis</i>	68	Brown Shrike	<i>Lanius cristatus</i>
31	Asian Palm-swift	<i>Cypsiurus balasiensis</i>	69	Rufous Treepie	<i>Dendrocitta vagabunda</i>
32	Crested Treeswift	<i>Hemiprocne coronata</i>	70	House Crow	<i>Corvus splendens</i>
33	Common Barn-owl	<i>Tyto alba</i>	71	Indian Jungle Crow	<i>Corvus macrorhynchos culminatus</i>
34	Indian Eagle-owl	<i>Bubo bengalensis</i>	72	Indian Golden Oriole	<i>Oriolus kandoo</i>
35	Brown Fish-owl	<i>Ketupa zeylonensis</i>	73	Common Woodshrike	<i>Tephrodornis pondicerianus</i>
36	Spotted Owlet	<i>Athene brama</i>	74	Black-winged Cuckoo-shrike	<i>Lalage melaschistos</i>
37	Indian Jungle Nightjar	<i>Caprimulgus indicus</i>	75	Small Minivet	<i>Pericrocotus cinnamomeus</i>
38	Indian Little Nightjar	<i>Caprimulgus asiaticus</i>	76	White-bellied Minivet	<i>Pericrocotus erythropygius</i>

Sr. No.	Common Name	Scientific Name	Common Name	Scientific Name
77	White-spotted Fantail	<i>Rhipidura albogularis</i>	Common Tailorbird	<i>Orthotomus sutorius</i>
78	White-browed Fantail	<i>Rhipidura aureola</i>	Siberian Chiffchaff	<i>Phylloscopus collybita tristis</i>
79	Black Drongo	<i>Edolisoma macrocerus</i>	Lesser Whitethroat	<i>Sylvia curruca halimodrepi</i>
80	White-bellied Drongo	<i>Edolisoma caerulescens</i>	Blyth's Reed-warbler	<i>Acrocephalus dumetorum</i>
81	Common Iora	<i>Aegithina tiphia</i>	Indian Reed-warbler	<i>Acrocephalus stentoreus/brunneescens</i>
82	Blue Rock-thrush	<i>Monticola solitarius</i>	Eastern Orphean Warbler	<i>Sylvia草crisirostris</i>
83	Asian Paradise Flycatcher	<i>Terpsiphone paradisi</i>	Greenish Warbler	<i>Phylloscopus trochiloides</i>
84	Black-naped Blue Monarch	<i>Hypothymis azurea</i>	Sulphur-bellied Warbler	<i>Phylloscopus griseolus</i>
85	Asian Brown Flycatcher	<i>Muscicapa latirostris</i>	Tawny-bellied Babbler	<i>Dumetia hyperythra</i>
86	Red-breasted Flycatcher	<i>Ficedula parva</i>	Common Babbler	<i>Turdoides caudata</i>
87	Ultramarine Flycatcher	<i>Ficedula superciliaris</i>	Jungle Babbler	<i>Turdoides striata</i>
88	Verditer Flycatcher	<i>Eumyiias thalassinus</i>	Large Grey Babbler	<i>Turdoides malcolmi</i>
89	Tickell's Blue Flycatcher	<i>Cyornis tickelliae</i>	Ashy-crowned Finch-lark	<i>Eremopterix griseus</i>
90	Grey-headed Canary-flycatcher	<i>Culicicapa ceylonensis</i>	Rufous-tailed Lark	<i>Ammodramus phoenicura</i>
91	Bluetroat	<i>Luscinia svecica</i>	Indian Bushlark	<i>Mirafra erythroptera</i>
92	Indian Black Robin	<i>Copsychus fulicatus</i>	Sykes's Lark	<i>Galerida deva</i>
93	Oriental Magpie-robin	<i>Copsychus saularis</i>	Oriental Skylark	<i>Alauda gulgula</i>
94	Black Redstart	<i>Phoenicurus ochruros</i>	Pale-billed Flowerpecker	<i>Dicaeum erythrorhynchos</i>
95	Siberian Stonechat	<i>Saxicola maurus</i>	Thick-billed Flowerpecker	<i>Pachycephala agilis</i>
96	Pied Bushchat	<i>Saxicola caprata</i>	Purple-rumped Sunbird	<i>Leptocoma zeylonica</i>
97	Brown Rock-chat	<i>Genanthe fuscata</i>	Purple Sunbird	<i>Cinnyris asiaticus</i>
98	Brahminy Starling	<i>Sturnia pagodarum</i>	House Sparrow	<i>Passer domesticus</i>
99	Rosy Starling	<i>Pastor roseus</i>	Yellow-throated Sparrow	<i>Gymnoris xanthocollis</i>
100	Asian Pied Starling	<i>Ciriacupica conura</i>	Western Yellow Wagtail	<i>Motacilla alba</i>
101	Common Myna	<i>Acridotheres tristis</i>	White Wagtail	<i>Motacilla cinerea</i>
102	Jungle Myna	<i>Acridotheres fuscus</i>	Grey Wagtail	<i>Motacilla maderaspatensis</i>
103	Cinereous Tit	<i>Parus cinereus</i>	White-browed Wagtail	
104	Dusky Crag-martin	<i>Pyronotus concolor</i>	Paddyfield Pipit	<i>Anthus rufulus</i>
105	Barn Swallow	<i>Hirundo rustica</i>	Tee Pipit	<i>Anthus trivialis</i>
106	Wire-tailed Swallow	<i>Hirundo smithii</i>	Olive-backed Pipit	<i>Anthus hodgsoni</i>
107	Red-rumped Swallow	<i>Cecropis daurica</i>	'Indian' Baya Weaver	<i>Ploceus philippinus philippinus</i>
108	Streak-throated Swallow	<i>Petrochelidon fluvicola</i>	Red Avadavat	<i>Amandava amandava</i>
109	Red-vented Bulbul	<i>Pytonotus cafer</i>	Scaly-breasted Munia	<i>Lonchura punctulata</i>
110	Grey-breasted Prinia	<i>Prinia hodgsonii</i>	Indian Silverbill	<i>Eudice malabarica</i>
111	Ashy Prinia	<i>Prinia socialis</i>	Common Rosefinch	<i>Erythrina erythrina</i>
112	Plain Prinia	<i>Prinia inornata</i>	Crested Bunting	<i>Emberiza lathami</i>
113	Jungle Prinia	<i>Prinia sylvatica</i>	Grey-necked Bunting	<i>Emberiza buchanani</i>
114	Zitting Cisticola	<i>Cisticola juncidis</i>	Red-headed Bunting	<i>Emberiza brunneiceps</i>
115	Oriental White-eye	<i>Zosterops palpebrosus</i>	Black-headed Bunting	<i>Emberiza melanocephala</i>

Sr. No.	Common Name	Scientific Name
77	White-spotted Fantail	<i>Rhipidura albogularis</i>
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80	White-bellied Drongo	<i>Edolisoma caerulescens</i>
81	Common Iora	<i>Aegithina tiphia</i>
82	Blue Rock-thrush	<i>Monticola solitarius</i>
83	Asian Paradise Flycatcher	<i>Terpsiphone paradisi</i>
84	Black-naped Blue Monarch	<i>Hypothymis azurea</i>
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91	Bluetroat	<i>Luscinia svecica</i>
92	Indian Black Robin	<i>Copsychus fulicatus</i>
93	Oriental Magpie-robin	<i>Copsychus saularis</i>
94	Black Redstart	<i>Phoenicurus ochruros</i>
95	Siberian Stonechat	<i>Saxicola maurus</i>
96	Pied Bushchat	<i>Saxicola caprata</i>
97	Brown Rock-chat	<i>Genanthe fuscata</i>
98	Brahminy Starling	<i>Sturnia pagodarum</i>
99	Rosy Starling	<i>Pastor roseus</i>
100	Asian Pied Starling	<i>Ciriacupica conura</i>
101	Common Myna	<i>Acridotheres tristis</i>
102	Jungle Myna	<i>Acridotheres fuscus</i>
103	Cinereous Tit	<i>Parus cinereus</i>
104	Dusky Crag-martin	<i>Pyronotus concolor</i>
105	Barn Swallow	<i>Hirundo rustica</i>
106	Wire-tailed Swallow	<i>Hirundo smithii</i>
107	Red-rumped Swallow	<i>Cecropis daurica</i>
108	Streak-throated Swallow	<i>Petrochelidon fluvicola</i>
109	Red-vented Bulbul	<i>Pytonotus cafer</i>
110	Grey-breasted Prinia	<i>Prinia hodgsonii</i>
111	Ashy Prinia	<i>Prinia socialis</i>
112	Plain Prinia	<i>Prinia inornata</i>
113	Jungle Prinia	<i>Prinia sylvatica</i>
114	Zitting Cisticola	<i>Cisticola juncidis</i>
115	Oriental White-eye	<i>Zosterops palpebrosus</i>

## धाविक आणि त्याचे इतर माळरानावरील पक्ष्यांसोबतचे सहजीवन राघवेंद्र वंजारी

निसर्गातील प्रत्येक सजीव आपले अस्तित्व टिकविण्याच्या स्पर्धेत असताना एका क्लिप्ट नैसर्गिक कायद्याने बांधलेला असतो . तो म्हणजे समान उद्देश असणाऱ्या दोन प्रजातीतला सहवास . पक्ष्यांसोबत इतर सर्व सस्तन प्राणी, किटक आणि वनस्पती वसुंधरेच्या विकास कालानुक्रमापासुन एकमेकांसोबत वाढत आले आहेत . प्रस्तुत लेख याच संदर्भात धाविक या माळरानावरच्या पक्ष्याच्या सहवास अध्ययनाबाबतीत माहिती सांगतो . धाविक हा भारतीय खंडप्राय प्रदेशातच आढळणारा एक सुंदर स्थायिक पक्षी आहे . सोलापूर जिल्ह्यातील विविध ठिकाणी या विषयावर अभ्यास करताना काही विशेष निरीक्षणे नव्याने नोंदवली गेली आहेत . हा पक्षी या पठारावर आढळणाऱ्या अकरा कुटुंबात समाविष्ट होणाऱ्या माळटिटवी, पाखुर्डी, कोतवाल, साईक्सचा तुरेवाला चंडोल, गानचंडोल, माळचंडोल, रेताडचंडोल, पितहा होला, व्हाळगड होला, विटकरी कवडा, काळा कुदल्या, टिटवी, लाल पंखांचा चंडोल, माळमुनिया, पिकविक, पांढऱ्या मानेचा करकोचा आणि माळढोक ह्या पक्ष्यांशी सहसंबंधी असल्याचे दिसून आले आहे .

विणीच्या हंगामपासून ते प्रजनन पुर्ण होईपर्यंत तो आपल्या परिसीमेवर मवतेदारी गजवतो . मार्च ते ऑगस्ट हा धाविकाच्या प्रजननासाठी उल्लम काळ असतो . सोलापूरमधील माझ्या निरीक्षणनुसार यांची संख्या चांगल्या प्रमाणात आढळून आली आहे पण विविध क्षेत्रांनुसार यांची संख्या कमी-जास्त होत असल्याचे दिसून आले . उघडऱ्या, मोकळ्या आणि कोरडऱ्या रानावर धाविक आणि माळटिटवी यांच्या घरट्यांमधील अंतर ५००-६०० मी . इतके आढळते . याच परिधांमध्ये विविध विशंना तुरेवाला चंडोल आणि माळचंडोल आपली घरटी याच काळात सांभाळताना दिसते . धाविकाच्या अंडी उबविण्याच्या काळात त्याच्या हड्हीत गानचंडोल आणि माळमुनिया यांची जोडीदार निवडीची चुरस पहावयास मिळती . पिल्लांच्या संगोपनानंतरच्या काळात माळरानवरील तापमानात लक्षणीय वाढ दिसून आली . या परिस्थितीशी जुळवून घेण्याकरीता धाविक शेती परिसरात स्थलांतर करताना आढळला .

तिक्षण, रुंद चोचीमुळे धाविक त्याचे खाद्य म्हणजेच मातीतील कीडे सहजपणे शोधतो . या आयत्या खाद्यासाठी कोतवाल आणि खाटिक यांमध्ये स्पर्धा लागते, पण अनेकदा धाविक आपले खाद्य यशस्वीपणे वाचवतो . माळढोक, पितहा होला, व्हाळगड होला, आणि पाखुर्डी हे पक्षीही खाद्य शोधताना आणि पाणवट्याजवळ धाविकासोबत दिसून आले .

पक्षीकुलातील अनेक सदस्यांसोबतचे धाविकाचे बहुरंगी-बहुरंगी सहजीवन निश्चितत्व अधोरोखित करण्याजोगे आहे .



Nandkishor Dule



## Abstracts

### Foraging behaviour of the near threatened Grey-headed Bulbul *Pycnonotus priocephalus* in relation to seasons and breeding stages

Balakrishnan, P.

I studied the foraging behaviour and adaptive strategies of the Grey-headed Bulbul *Pycnonotus priocephalus*, an endemic species of the Western Ghats, India, in relation to seasons and reproductive stages in two tropical rainforest sites, Silent Valley National Park and Muthikkulam Reserve Forest, from 2002 to 2005 and 2012 to 2013. The species was recorded to use various foraging manoeuvres and food handling techniques, and was found to frequently use energy conserving manoeuvres and feeding techniques such as gleaning and gulping. There were significant differences in its foraging height and foraging tree use due to differential habitat selection during the breeding and non-breeding seasons. It showed plasticity in the foraging behaviour during the different reproductive stages. Its participation in mixed-hunting flocks during the local migratory phase (non-breeding season) seems to be an adaptive strategy to cope with resource competition and predation risks in a new and challenging habitat, which is in accordance with other studies on the flocking behaviour of tropical birds.

**Key words:** behavioural plasticity, foraging behaviour, Grey-headed Bulbul, mixed-species flocks, *Pycnonotus priocephalus*, Western Ghats

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### Aerobic culturable bacterial microflora in resident *Gyps* vulture species of India

Shringarpure, R.N., M.D. Kulkarni, C. Sawant, A. Bhagwat, T.H. Galligan & V. Prakash

Microflora of three Critically Endangered, resident *Gyps* species of Indian vultures was studied at the Vulture Conservation Breeding Centre, Pinjore, Panchkula district, Haryana. Cloacal and choanal swabs from 32 adult *Gyps* vultures (10 White-rumped *Gyps bengalensis*, 11 Long-billed *G. indicus* and 11 Slender-billed *G. tenuirostris*) held in captivity at the centre were collected in October 2011 and analyzed to determine the presence of aerobic culturable bacteria. A total of 23 bacterial species were isolated from the 64 cloacal and choanal samples collected and analyzed. The commonly encountered bacteria in the gastrointestinal tract were *Escherichia coli*, *Enterococcus faecalis*, and *Enterococcus avium*, while *Staphylococcus epidermidis*, *S. saprophyticus*, and *Streptococcus pneumoniae* were prevalent in the respiratory tract. The rest of the bacterial species were of low prevalence, and no specific pattern of colonization was seen. In spite of their exposure to a variety of microorganisms due to the scavenging nature of the vultures, only a few organisms were observed to colonize successfully and form the normal flora. The bacterial species richness and diversity among the three vulture species was similar.

**Key words:** Gastrointestinal, respiratory, aerobic culturable bacteria, *Gyps* vultures, conservation, Critically Endangered

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### Population and nesting characteristics of the vulnerable White-naped Tit *Parus nuchalis*

at Sajjangarh Wildlife Sanctuary, Rajasthan, India

Sharma, S.K. & V.K. Koli

The White-naped Tit *Parus nuchalis* is endemic to India and found in two disjunct areas. It is classified Vulnerable by BirdLife International, mainly due to its restricted distribution and declining population, which is attributed to habitat degradation. We studied the population, distribution and nesting behaviour of the species between January 2007 and December 2009 at Sajjangarh Wildlife Sanctuary, Udaipur, Rajasthan, India, where it was recently discovered. The species was seen throughout the year, but its habitat use changed with the seasons. In summer, sightings were common in the lower-elevation thorny zone, while during the monsoon season birds used the upper-elevation zone, dominated by the salai tree *Boswellia serrata*. Sightings in winter were few, probably because the population mostly moved to surrounding areas. The species is a secondary cavity nester with nests confined to the salai zone. A total of 12 nests were found in this zone, all on *B. serrata* trees.

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Eurasian Spoonbill *Platalea leucorodia*  
Photograph: Parveen Shaikh

## BOMBAY NATURAL HISTORY SOCIETY

Founded in 1883 for the study of natural history, the Bombay Natural History Society (BNHS) is now one of the premier research and conservation organisations in the country. The Society publishes a journal, the *Journal of the Bombay Natural History Society*, devoted to natural history and also has a popular publication, *Hornbill*, for the layman. It has also published a number of books on wildlife and nature. Its library has a large collection of books and scientific journals on wildlife and the environment. The Society's invaluable collection of bird, mammal, reptile, amphibian and insect specimens has been recognised as a National Heritage Collection.

Membership of the Society is open to individuals and institutions within India and abroad. For more details, please write to:

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Bombay Natural History Society,  
Hornbill House,  
Shaheed Bhagat Singh Road,  
Mumbai 400 001. India.  
Email: [bnhsmembership@gmail.com](mailto:bnhsmembership@gmail.com)  
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The Centre collects, collates, stores, and disseminates information on Avian Ecology.

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